

Claims

1. A data storage medium comprising an information carrier which is wound in a spiral fashion and on which information units are provided which can be read optically, the information carrier being optically transparent.
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2. The data storage medium as claimed in claim 1, characterized in that the information units can be read through a plurality of information carrier layers (10).
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3. The data storage medium as claimed in claim 1 or 2, characterized in that the data storage medium can be read in the wound state.
- 15 4. The data storage medium as claimed in any of claims 1 to 3, characterized in that the information carrier is a transparent polymer film (11).
- 20 5. The data storage medium as claimed in claim 4, characterized in that PMMA or BOPP is used as polymer film (11).
6. The data storage medium as claimed in claim 4 or 5, characterized in that between the polymer film layers (10) a transparent adhesion agent (12) is used, in particular a pressure sensitive adhesive.
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7. The data storage medium as claimed in claim 6, characterized in that the adhesion agent (12) possesses a refractive index which differs little from the refractive index of the information carrier.
- 30 8. The data storage medium as claimed in claim 7, characterized in that the difference in the refractive indices of information carrier and adhesion agent (12) is so little that the reflection at the boundary is less than 4%, preferably less than 1%, and, with very particular preference, such that the difference in the refractive indices is less than 0.005.
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9. The data storage medium as claimed in any of claims 4 to 8, characterized in that the polymer film (11) has a thickness of

between 10 and 100 μm , preferably around or below 50 μm , with particular preference around 35 μm .

- 5 10. The data storage medium as claimed in any of claims 6 to 9, characterized in that the adhesion agent (12) has a film thickness of between 1 and 40 μm , preferably below 25 μm , in particular around 2 μm .
- 10 11. The data storage medium as claimed in any of claims 1 to 10, characterized in that the data storage medium has an optically transparent winding core which is formed in particular as a transparent hollow cylinder.
- 15 12. The data storage medium as claimed in any of claims 1 to 11, characterized in that the data storage medium is preformatted, the formatting being formed by and/or by means of the spiral layers (10).
- 20 13. The data storage medium, in particular as claimed in any of claims 1 to 12, characterized in that the optical data storage medium comprises as information carrier a transparent polymer film (11) which is pretensioned, especially in two planes.
- 25 14. The data storage medium as claimed in any of claims 1 to 13, characterized in that the information units, or some of them, can be produced by local thermal heating of the information carrier.
- 30 15. The data storage medium as claimed in claim 14, characterized in that, at the location of the thermal heating, the pretensioned information carrier has a locally changed optical density, in particular with a change in refractive index of about 0.2.
- 35 16. The data storage medium as claimed in any of claims 1 to 15, characterized in that the information units are formed by changing the optical properties in a region of less than 1 μm in diameter.
17. The data storage medium as claimed in any of claims 1 to 16, characterized in that the information units are designed for the storage of one of two states.

18. The data storage medium as claimed in any of claims 1 to 16, characterized in that the information units are designed in such a way that, at least at some points, no saturation of the information carrier change has taken place, and the information units are able to adopt more than two different states.
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19. The use of a data storage medium in a data drive for a data carrier, as set forth in any of the preceding claims, in which a relative movement takes place between information units and reading head (2), with the data carrier generally being stationary and/or the reading head (2), especially in the central region of the wound body, rotating.
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